

Almond Agrichemical Regulatory Risk Assessment

September 2023

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use. For older agrichemicals these pressures are often the result of reconsiderations involving new or refined risk assessment methodologies that requiring the generation of new data. A consequence of which can be that many of these agrichemicals are not meeting contemporary risk assessment standards as the necessary data is unavailable, or where data is available, the risk posed is considered unacceptable.

The use of agrichemicals can also be impacted through differences in standards between trading partners. The lack of an appropriate pesticide maximum residue limit (MRL) in an importing country can, for practical purposes, effectively prohibit use in the exporting country so as to ensure compliance, as a MRL breach would adversely affect market access.

The effects of the above are greater regulatory pressure placed on the use of individual agrichemicals or chemical groups. As a consequence it is possible that the number of approved agrichemical options could be adversely impacted.

To assist strategic planning, with respect to future pest management options, the following tables have been developed to highlight the regulatory threats to agrichemicals currently approved for the management of the pests and diseases in almonds as well as current initiatives aimed at addressing identified pest management deficiencies.

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R1	Short-term: Critical concern over retaining access
R2	Medium-term: Maintaining access of significant concern
R3	Long-term: Potential issues associated with use: Monitoring required

Active constituent	Chemical Group	Pest/Problem	Comment
INSECT AND OTHER PESTS			
Abamectin	6	Bryobia mite (Brown almond mite)	APVMA: Nominated for spray drift label review Canada: Some uses amended, others cancelled EU: Use restricted to permanent greenhouses
		Two-spotted mites	
Bifenazate	20D	Bryobia mite (Brown almond mite)	Canada: Review initiated EU: Proposed restriction to non-edible crops and to permanent greenhouses.
		Two-spotted mites	
Bifenthrin	3A	Carpophilus beetle/Dried fruit beetle (PER87216)	Canada: Not authorised EU: No authorisation in place
		Brown marmorated stink bug (PER82374)	
Chlorantraniliprole	28	Carob moth	
Chlorpyrifos	1B	Plague locusts (PER13642)	APVMA: Under review. Codex: Scheduled for review by JMPR Canada: Cancellation of all uses. EU: No authorisation in place USA: EPA decision to cancel use on food crops
Clofentezine	10A	Two-spotted mites	EU: No authorisation
		Bryobia mite (Brown almond mite)	
Clothianidin	4A	Carob moth	APVMA: Under review Canada: Field uses cancelled or amended EU: No authorisation USA: Re-registration with new risk mitigation measures
		Carpophilus beetle/Dried fruit beetle	

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Active constituent	Chemical Group	Pest/Problem	Comment
Cyflumetofen	25A	Bryobia mite	
		European red mite	
		Two-spotted mite	
Etoxazole	10B	Bryobia mite (Brown almond mite)	EU: Only uses on greenhouse ornamentals approved & Candidate for substitution
		European red mite	
		Two-spotted mites	
Fatty acids - K salt	UN	Aphids	
		Mealybug	
		Spider mites	
		Thrips	
		Two-spotted mites	
Indoxacarb	22A	Fire ants	Canada: Not authorised EU: No authorisation
Lambda-cyhalothrin	3A	Fruit flies(PER12961–SA Biosecurity) (Soil drench)	EU: Candidate for substitution
Malathion/Maldison	1B	Plague locusts (PER13642)	APVMA: Under review Codex: Re-evaluation scheduled EU: Restricted use to permanent greenhouses
Methoxyfenozide	18	Carob moth	EU: Proposed restricted authorisation & Candidate for substitution
Paraffinic oil/petroleum oil	UN	Bryobia mite (Brown almond mite)	
		Aphids	
		Mites	
		San Jose scale	
		Scale insects	
Pirimicarb	1A	Green peach aphid	Codex: JMPR re-evaluation scheduled EU: Candidate for substitution
Pymetrozine	9B	Green peach aphid	Canada: Restricted use to glasshouses only Codex: No registrant support EU: No authorisations
Pyriproxyfen	7C	Fire ants	
Spinetoram	5	Carob moth	

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Active constituent	Chemical Group	Pest/Problem	Comment
Sulfoxaflor	4C	Aphids	USA: Pollinator concerns EU: Restricted to permanent glasshouses only
		Black peach aphid	
		Green peach aphid	
Sulfur	UN	Bryobia mite (Brown almond mite)	
		San Jose scale	
		Frosted scale	
Tetraniliprole	28	Carob moth	EU: No authorisations
		Carpophilus beetle/Dried fruit beetle	

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Active constituent	Chemical Group	Disease /Problem	Comment
DISEASES			
<i>Agrobacterium radiobacter</i>	NC	Crown gall	
Azoxystrobin	11	Anthracnose	Canada: Review proposed
		Blossom blight (PER93022)	
Azoxystrobin + tebuconazole	3 + 11	Blossom blight	<u>Tebuconazole</u> APVMA: nominated for review Canada: Under review EU: Candidate for substitution USA: Under review
		Brown rot	
		Rust	
		Shot hole	
Captan	M4	Anthracnose	EU: Under review proposed restriction to use in permanent greenhouses only USA: Under review
Chlorothalonil	M5	Rust	APVMA: nominated for review Canada: Cancellation of uses proposed EU: No authorisation in place UK: Proposed non-renewal USA: Under review
		Shot hole	
Copper	M1	Brown rot	EU: Candidates for substitution
		Freckle and scab	
		Leaf curl	
		Shot hole	
Cyprodinil	9	Blossom blight	Canada: Under review EU: Candidate for substitution
		Rust	
		Shot hole	
Fluopyram + tebuconazole	7 + 3	Blossom blight	<u>Tebuconazole</u> APVMA: nominated for review EU: Candidate for substitution
		Stone fruit rust	
		Shot hole	
		Hull rot (Suppression)	

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Active constituent	Chemical Group	Disease /Problem	Comment
Fluopyram + trifloxystrobin	7 + 11	Blossom blight	<u>Trifloxystrobin</u> Canada: Review initiated
		Hull rot	
		Rust	
		Shot hole	
Fluxapyroxad + pyraclostrobin	7 + 11	Rust	<u>Pyraclostrobin</u> Canada: Review initiated
		Alternaria leaf spot	
		Anthracnose	
		Blossom blight	
		Nut scab	
		Shot hole	
Iprodione	2	Blossom blight	Canada: Majority of food crop uses deleted Codex: Review scheduled in 2023 EU: No authorisation in place USA: Proposed deletion or restriction of uses
		Brown rot	
Isopyrazam	7	Anthracnose	EU: Authorisation not renewed
		Blossom blight	
		Brown rot	
		Hull rot	
		Rust	
		Shot hole	
Mancozeb	M3	Blossom blight	<u>APVMA: nominated for review</u> Canada: Many uses cancelled Codex: To be reviewed 2023/24 EU: Authorisation not renewed
		Brown rot	
		Freckle and scab	
		Rust	
		Shot hole	
Mefentrifluconazole	3	Blossom blight	
		Hull rot	
		Shot hole	

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Active constituent	Chemical Group	Disease /Problem	Comment
Penthiopyrad	7	Blossom blight	
		Brown rot	
Phosphorous acid	33	Phytophthora (Suppression)	
Polyoxin D zinc salt	19	Hull rot (Suppression)	EU: No authorisation in place
Propiconazole	3	Anthracnose (PER12989)	APVMA: nominated for review
		Blossom blight (PER12989)	EU: No authorisations USA: Under review
Pyraclostrobin	11	Rust	Canada: Review initiated
Sulfur	M2	Blossom blight	
		Brown rot	
		Freckle and scab	
		Leaf curl	
		Rust	
		Shot hole	
Tebuconazole	3	Eutypa dieback (Wound dressing)	APVMA: nominated for review Canada: Under review EU: Candidate for substitution USA: Under review

Plant growth regulators		
Active constituent	Problem	Comment
Aminoethoxyvinylglycine (AVG)	Extend flower life	
Cyanamide	Regulation of bud dormancy	EU: No authorisation

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Active constituent	Chemical Group	Comment
WEEDS		
Carfentrazone-methyl	14	
Diquat	22	APVMA: Currently under review EU: No authorisation in place
Flumioxazin	14	EU: Candidate for substitution
Glufosinate	10	Canada: Review proposed EU: No authorisation in place
Glyphosate	9	Ongoing issues internationally EU: Under review
Haloxyfop-P	1	EU: No authorisation
Isoxaben	29	
Napropamide	0	
Norflurazon	12	EU: No authorisation in place
Oryzalin	3	EU: No authorisation in place
Oxyfluorfen	14	EU: Candidate for substitution USA: Interim review decision Label amendments proposed
Paraquat	22	APVMA: Currently under review Canada: Review initiated EU: No authorisation in place Rotterdam Convention - nominated
Pendimethalin	3	EU: Candidate for substitution
Saflufenacil	14	EU: No authorisation in place
Simazine	5	APVMA: nominated for review EU: No authorisation in place

Funding statement: MT2007–Regulatory Support & Response Co-ordination. This *multi-industry* project has been funded by Hort Innovation, using *industry research and development levies* and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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